# Classical Trade Protectionism 1815–1914

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# 13 Spanish protectionism during the *Restauración*, 1875–1930[1]

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## Introduction

Although few Spanish economic historians make it explicit, most of them seem to take for granted the importance of protectionism for Spain's economic growth in the last quarter of the nineteenth century and the first third of the twentieth century. Broadly speaking, it can be argued that most of the literature favours a positive assessment of the incidence of protectionism on economic growth, although this is expressed with several nuances. On the one hand, and coinciding with Flores de Lemus, most are critical of excessive protectionist measures that the rhetoric proposition of 'integral protection' would imply. But, on the other hand, they suggest that a more free-trade alternative was too risky. In their opinion, the lack of development of the Spanish economy implied serious difficulties for initiating specialisation processes, and, consequently, both factors and resources could disappear if they were forced to face international competition (instead of moving to other productive sectors with comparative advantage).[2]

That is, most authors hide behind the inevitability of the protectionist option, either for political reasons,[3] or instead for economic ones.[4] In other words: the belief that an alternative and milder form of protectionism would have been politically unfeasible and negative as a whole in economic terms.[5] Only during these last few years have some authors emphasised the possibility that, in the absence of such a high level of protection, the Spanish economy may have reacted similarly to other countries in that period, thus precipitating some of the transformations that were eventually undertaken in the second half of the twentieth century.[6]

Protectionism achieved a central role in the political debate of the second half of the nineteenth century and, in consequence, in the recent historiographic debate. The study of the protectionist law-making process, the instruments used and the objectives followed has concentrated a great deal of research efforts in recent years.[7] Despite the fact that these studies have provided an in-depth analysis and have enriched the vision of this period, they have left aside some of the essential questions on the role

played by commercial policy in Spanish economic growth in the last quarter of the nineteenth century and the first quarter of the twentieth. Thus, it seems necessary to refocus on a few simple but essential questions:

1 Did Spain have a high or a low protection in the last quarter of the nineteenth century and first third of the twentieth? That is, was the evolution of protection in Spain fundamentally different to other countries with similar welfare levels?
2 What were the main causes that explain the Spanish protection on some sectors at the expense of others?
3 Did these differing levels of protection have important consequences for Spanish economic growth, and, if so, were they positive or negative?

This study is part of a broader research project whose ambition is to give an answer to these questions, albeit that it may be a provisional one, by simultaneously studying the Spanish and Italian cases.[8] It represents an attempt to face the issue of measuring Spanish protectionism in the long term, with the purpose of providing a more rigorous answer to the first question raised above. Difficulties in measuring protection have extended the traditional methodology for studying tariff laws, the protectionist debate and its results. This study, although necessary, is not enough, since it may introduce an incorrect vision of the protection that was really implemented: changes in tariff laws raising specific tariffs can, paradoxically, represent a reduction in the nominal protection, given certain conditions in other variables. The first necessary step in the study and analysis of protectionism is inevitably measuring nominal *ad valorem* protection, for particular products as well as at the aggregate level, with the objective of portraying a comparative perspective of the Spanish experience, as well as the study of its effects over the economy.[9]

The main technical discussion of this chapter is dedicated to the analysis of a new series of indicators to measure Spanish protectionism in the period between 1870 and 1930. These indicators do not, by themselves, comprehend the broad topic of protectionism and economic growth, but establish a solid base to deepen our knowledge on the level, the changes and the nature of the Spanish protectionist profile.

These indicators are presented in the first section, along with other qualitative assessments that appear in the literature. The intention here is to openly discuss the contradictions of our current knowledge of the evolution of protectionism in Spain. Recent conventional methods for measuring protection in Spain offer a relatively moderate vision of the Spanish protection levels from the beginning of the *Restauración*, displaying a relatively flat profile during the following years. Agricultural interests would have led the years of return to protection in the 1890s and industry would have been eventually satisfied only with the 1906 tariff law, some years

before the First World War. A new change in the level would come only with the Cambó Tariff in the 1920s.[10]

The second and third are, respectively, dedicated to putting forward alternative and more adequate indicators for measuring protection, as well as looking at the technical problems and the reliability of the tariff average measures for the Spanish case. The fourth section looks over the results of all these tests and confirms that the levels of protection in Spain were already relatively high at the beginning of the *Restauración*, either compared with subsequent levels or with other countries. What is observed at a later stage is not a flat profile but, instead, one with an upward tendency, albeit cyclical in its evolution. The conclusions of this chapter discuss previous results and suggest a return to the traditional view on the causes of the new industrial protectionist turn of 1891.

## What do we know about the evolution of protectionism in Spain?

The economic indicator that is generally accepted as a good indicator of the long-term evolution of the protection level of a given economy is the tariff average. This index calculates the percentage of tariff revenue in relation to the value of imports (from now on, NT). Another option, more dubious but also very extensive because of the simplicity of its computation, involves estimating the evolution of imports as a percentage of the gross national product (GNP), assuming that increases and decreases in demand equally affect the numerator and the denominator of this indicator (from now on, OM).[11] In general terms, both indicators should evolve with an inverse trend, that is, when the protection represented by NT increases, a contraction in imports greater than that of the GNP can be expected, which in turn implies a decrease in OM. Bearing in mind the fragility of this relationship, it is interesting to follow the evolution of trade policy changes through a systematic comparison of both indicators.

Figure 13.1 offers a stylised comparison of both indicators in logarithmic terms, confirming, to a large extent, the expected negative evolution.

The most outstanding feature of the 1849 tariff was the reduction in the list of prohibited imports and the replacement of *ad valorem* rights for specific ones, which, in the context of a moderate price increase tendency, seems to have helped to obtain a more moderate protection level in Spanish trade policy in the following years.[12] In the decade of 1850 and the first half of the following decade, both indicators coincide in portraying a period of significant liberalisation in tariff protection. The second half of the 1860s and the first half of the 1870s is a period of unstable maintenance of the previous achievements, despite the fact that the NT indicator decreases until 1872.

The beginning of the *Restauración*, with the suspension of the *Base Quinta*[13] of July 1875, is depicted by both indicators, respectively, as an

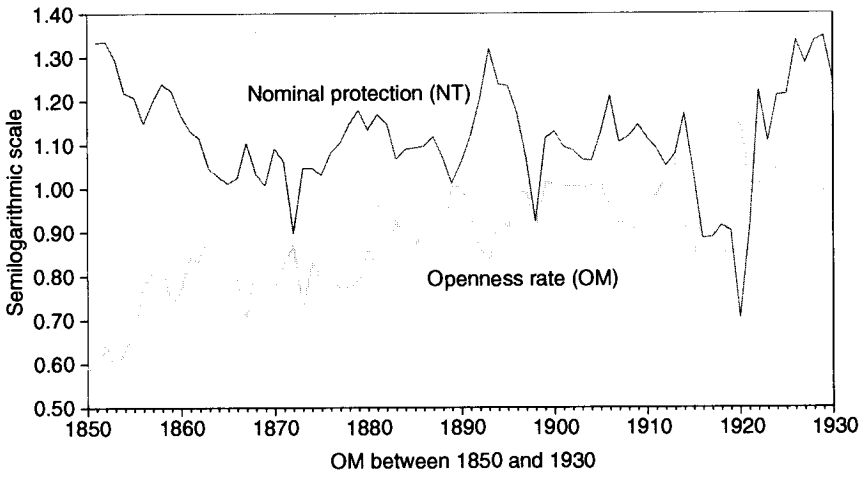


*Figure 13.1* Changes in the nominal protection (NT) and the degree of openness of Spanish imports (sources: Tariff revenue, from *Volúmenes Anuales Estadísticas del Comercio Exterior*; Imports, from Tena, 1989; GNP from Prados, 1995).

increase in the level of protection through portraying a contraction in imports and an increase in NT. This tendency changes again at the beginning of the 1880s, with a smoothening of NT and a greater openness in imports. The impact of the 1891 tariff is clearly detected by the inverse behaviour of both indicators, although over a very brief period of time. Broadly speaking, one can observe less coherence in the expected behaviour of both indicators during the turn of the century, as well as a certain difficulty in evaluating the relative importance of the tariff laws of 1891 and 1906. The effect of the Cánovas Tariff of 1891 is significant, although it only lasts three years, whilst that of the Salvador Tariff of 1906 seems less relevant. Between 1923 and 1926, the indexes show an increase in the nominal protection accompanied by a significant contraction of imports. The impact of the Cambó Tariff of 1922 on both indexes lasts a little longer but is quite similar to that of the Cánova's Tariff of 1891.

A further necessary step to avoid blind alleys is to highlight the differences encountered in the series of tariff revenue and 'special trade' most commonly used in the historiography.

In Table 13.1, the common denominator of all series, excluding that of Tirado (1996), refers to import series constructed by Prados de la Escosura and Tena, and presented in Tena (1989). Thus, discrepancies in the results of the NT indicator have their origin in the different sources used to obtain the tariff revenue of the numerator. In the cases in which (state) budgetary sources have been used, such as in Comín (1993) or in Mitchell (1992), the results obtained show higher levels than in the cases in which

*Table 13.1* Commonly used indexes of nominal protection (NT) (tariff revenue/value of imports)

| | *NT (a) (Comín) (%)* | *NT (b) (Mitchel) (%)* | *NT (c) (Tirado) (%)* | *NT (d) (Esta. Comer) (%)* | *NT (e) (Tena) (%)* |
|---|---|---|---|---|---|
| 1877 | 16.5 | 16.3 | 14.0 | 12.7 | 12.7 |
| 1889 | 14.9 | 14.7 | 11.3 | 10.3 | 11.0 |
| 1897 | 10.6 | 10.2 | 11.0 | 11.7 | 14.6 |
| 1913 | 16.3 | 15.9 | 13.4 | 12.0 | 14.9 |
| 1926 | 26.3 | 25.4 | n.a. | 23.8 | 20.1 |

Notes
(a) Comín (1985); (b) Mitchell (1992); (c) Tirado (1996); DAOMEPON series; (d) *Estadísticas del Comercio Exterior*; (e) Tena (2001): Tariff revenue data obtained from the database of this study, Apendix 13.1.

it was chosen to use tariff revenue data derived from Spanish trade statistics (Tirado's (c) estimation and (d) and (e), author's calculation).[14] Within each group (budget-based sources or sources based on trade statistics), the levels and evolution are reasonably similar. However, in comparing both groups, the perception of the level and the evolution can be very different. The first two indicators in Table 13.1 show, generally, higher levels than the last two. This happens for every year except for 1897. This implies that, in the first two cases, the return to protectionism appears represented in the year 1877 (the year with the highest protection until 1926), whilst in the last two, it seems rather an incremental process beginning at the end of the 1880s.

In any case, whatever NT indicator we use to measure protection in Spain, the most relevant characteristic of this indicator is that it shows a much higher level and a different profile when compared with the arithmetic average of a large sample of European countries for which information is available.

As can be seen from Figure 13.2, the Spanish NT displays, in the first place, a much higher level, and, additionally, a profile which is more or less a concave curve, whose inflexion and lowest level are in the centre. This contrasts with the European NT, which is closer to a convex profile and whose climax is in the central years of the chosen period.

May it be said that the evolution of the global level of protection in Spain is markedly different to that of most European countries? It is difficult to answer this question without a study that evaluates and checks the accuracy of the NT indicator for Spain as well as for Europe. However, as a first approximation, if we suppose that the downward bias of the NT indicator is inversely proportional to its level, the higher Spanish level would imply a bigger difference in real terms in favour of Spain. In the Italian case, a recent study has confirmed the existence of a moderate profile of protection and an acceptable accuracy of the NT indicator.[15] The

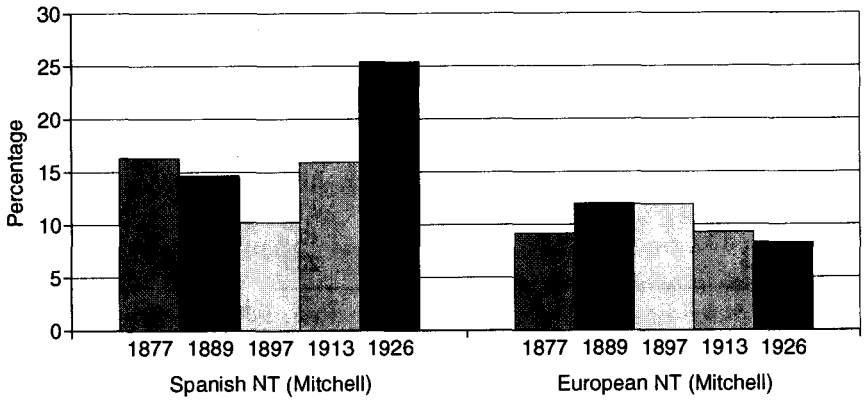


*Figure 13.2* Level and profile of nominal protection in Spain and in Europe (sources: Spain, Table I; Europe, arithmetic average of the NT of Germany, Russia, UK, France, Austria-Hungary (Austria in 1926), Italy, Spain, Belgium, the Netherlands, Sweden, Switzerland, Denmark and Portugal (see Federico and Tena, 1998, Appendix Table 4).

intention of the following pages is to offer a rigorous study of the behaviour of the Spanish nominal protection, testing the accuracy of the average tariff index.

## How to measure protection

From the mid-nineteenth century until the Great Depression of the 1930s, quotas and other non-tariff barriers were practically non-existent. Commercial policy was based exclusively on tariffs, and therefore, measuring the protection level of a particular economy is comparatively simple for those years. In principle, a tariff produces the effect of raising the tariff-setting country's internal price above the international price, in an amount equivalent to that of the tariff.[16] The tariff can be expressed as a percentage of the international price (*ad valorem* tariff), or, as in Spain and in most continental European countries, as a fixed amount per unit of weight (specific tariff). In the latter case it is necessary, for comparative purposes, to compute it as

$$Ti = Ai/Pi \tag{13.1}$$

where $Ai$ is the specific tariff and $Pi$ is the international price.[17]

In most empirical work, figures on specific tariffs are taken from tariff laws. This *ex-ante* measurement produces some mistakes because of the large variety of products imported under special regimes, such as preferential bilateral agreements or exemptions. For this reason, it is better to

use the *ad valorem* percentages in *ex-post* terms, as a percentage of the tariff revenue and imports values for each product:

$$PNi = (Qi^*Ai)/(Qi^*Pi) \tag{13.2}$$

The main problem is how to aggregate the individual protection of each product in order to estimate the global protection of an economy. In principle, tariffs have to be weighed with the structure of the import demand that would have existed under free-trade conditions. This, unfortunately, is not an observable fact. Although some steps have been done in the right direction recently, economic theory has not yet provided a satisfactory alternative. We thus have to offer three alternative weighting methods:

1 To do without the weightings, i.e. no weightings at all – the simple tariff average across sectors – as suggested by League of Nations (1927) and Liepman (1938):

$$UNT = \Sigma T_i/N \tag{13.3}$$

where $Ti = Ai/Pi$ and $N$ = number of products imported or taxed.

2 The actual structure of imports in the given year:

$$\mathrm{NT} = \Sigma rt_i^* T_i \tag{13.4a}$$

where $r_i$ is the share of the $i$-th good in the total amount of imports *ex-post* of the introduction of the tariff. By definition, it can be calculated by dividing the total tariff revenue between the total imports.

$$\mathrm{NT}t = \sum_{i=1}^{n}(Q_{it}^*A_{it})/\sum_{i=1}^{n}(Q_{it}^*P_{it}) \tag{13.4b}$$

3 The composition of trade (the structure of imports) of the country a year before the introduction of the tariff, as McCloskey suggested (1980):

$$\mathrm{RNT}t = \Sigma rt_{i-1}^* T_i \tag{13.5}$$

where $rt_{i-1}$ is the share of the $i$-th product in total imports *ex-ante* the tariff introduction. Its calculation would be the following:

$$\mathrm{RNT}t = \sum_{i=1}^{n}(Qi_{t-1}^*Ai_t)/\sum_{i=1}^{n}(Qi_{t-1}^*Pi_{t-1}) \tag{13.6}$$

which is conceptually equivalent to a Laspèyres price index, exactly as NT can be assimilated to a Paasche price index. All these alternatives introduce some type of bias.

The UNT assumes that each imported product has an equal consumption share under free trade, which means that an implausible demand

structure is assumed. The greater the disaggregation with which it is calculated, the smaller the scale of the bias in relation to a free-trade demand. The magnitude of the bias is (roughly) inversely proportional to the number of products included in the average (Tumlir-Till, 1971), which in turn depends on the lay-out of trade statistics. The NT generally causes a downward bias in the results, given that tariffs reduce the presence of the most protected products in relation to those least protected. In this sense, it can be said that the extent of the bias depends on the elasticity of imports in those groups of products that have a higher share of the demand for imports.[18]

If the elasticity and the quota of the product are significantly high enough, an increase in protection may imply a decrease in the NT indicator. Equally, a country imposing prohibitive tariffs on all products except one (and keeping it with a customs-free access) may appear less protectionist than a country imposing a uniform 5 per cent tariff on all its imports.

Lastly, RNT is possibly the most attractive of all the alternatives offered, if only it were possible to find a (not-too-distant) year with a closer free-trade import structure. In the Spanish case, finding a free-trade and a not-too-distant year must be, as of necessity, considered a very approximate task.

Therefore, it can be concluded that there is no clear and manageable way for measuring a country's protection. The indicator that measures the 'true protection' of an economy cannot be estimated. Therefore, given that there is no ideal solution as yet, the best way forward is to reach a compromise (as occurs in all problems concerning index numbers): given the bias introduced by each indicator, the goal must be to try to see if there is a reciprocal consistency in the joint interpretation of all the indicators.

The proposed indexes also offer the possibility of measuring the degree of incidence of tariffs, prices and changes in the demand structure on changes in the level of protection from one period to the next. Historiography ascribes tariffs a prominent role in most commercial policy changes, but this hypothesis has not been tested. The level of protection can also vary even if tariffs remain constant, either through changes in the composition of trade (as a result of the same commercial policy or other reasons), or, with specific tariffs, due to changes in the general price level or the relative prices of the different product groups that compose it.

Therefore, changes in the NT indicator from one period to another can be expressed as follows:

$$[NT_t - NT_{t-1}] = [NT_t - RNP_t] + [RNP_t - RNT_t] + [RNT_t - NT_{t-1}] \quad (13.7)$$

where NT is defined as in (13.4b), RNT as in (13.6) and RNP as:

$$RNPt = \sum_{i=1}^{n} (Qi_{t-1} * Ai_t) / \sum_{i=1}^{n} (Qi_{t-1} * Pi_t) \quad (13.8)$$

Each component of the right-hand side of the equation measures, *ceteris paribus*, changes in the aggregate protection. The first square brackets (the quantity effect) measure the effect of changes in the composition of imports on the variation of the NT indicator between two consecutive periods (maintaining prices and tariffs constant). The second square brackets – the price effect – measure the influence of prices on variations of NT (maintaining quantities and tariffs constant). Lastly, the third square brackets – the tariff effect – measure the influence of tariff changes on variations of NT (maintaining quantities and prices constant, or, in other words, maintaining the same structure of imports as in the initial period), that is, an approximation to the originally forecasted effect of the trade policy.[19]

## Levels, changes and the singularity of protection during the *Restauración* period

The years chosen to make this estimation for the Spanish case are 1877, 1889, 1897, 1913 and 1926. They have been selected on two counts. First, in order to minimise the number of years with the condition of being situated before and after the tariff laws of 1882, 1891, 1906 and 1922. Second, so as to work with data from years where the overvaluation and undervaluation of the figures of Spanish statistics would bias as little as possible the estimation of the level of nominal protection.[20]

From official trade statistics in the chosen years, a detailed correspondence between the Spanish tariff classification of products and the second revision of the Standard International Trade Classification of the United Nations (SITC) has been carried out for levels of four and five digits.[21] The (Spanish) annual volumes of trade before 1933 present two different denominations or categories: 'general trade' (*comercio general*) and 'special trade' (*comercio especial*). The first includes all imports for domestic consumption (direct or through free ports). The second also includes products for domestic consumption, but only for those categories with customs-free access or through a special tariff regime. In principle, the sum of these two categories adjusts itself very well to the modern definition of 'special trade', and this is the initial sample that has been used.[22]

Some products have been left out, either due to technical reasons (the type of units in which they were expressed or a lack of correspondence with SITC numbers, for example), or due to economic reasons (for example, gold items and products imported for monopolistic consumption by the state). As a result, a sample has been obtained which includes between 80 per cent and 95 per cent of the total amount of imported products registered by trade statistics as total imports, and almost every import product dedicated to consumption (with the exclusion of the aforementioned group of products due to technical reasons).

The results of this study are represented in a matrix with 750 rows,

corresponding to the same number of SITC four-digit groups. Along with the SITC number and the product name, the following information is displayed for each of the five years: the number of the tariff classification, the value and quantity imported, the tariff revenue obtained for each product and the value of the specific tariff that legally corresponds for each year.[23] The prices for each SITC (*Pij*) have been computed dividing their value by their quantity (*Qij*). Likewise, with the tariff revenue and the imported quantity, it has been possible to calculate the tariffs really applied to each SITC number (*Aij*).

The SITC numbers previously mentioned have been grouped in accordance with the GATT (1985/6) classification. This has been done to aid understanding and to offer a clearer economic interpretation of the estimated protection levels for the different indicators. In this way, it is possible to carry out a more rigorous study, using well-defined categories with economic sense, grouping the products of the SITC classification into the following categories: (1) primary products, (2) semi-manufactured goods and (3) industrial manufactures (as well as their subsequent subdivisions). The disaggregated results according to the GATT classification of the estimations of the NT, UNT and RNT indicators are offered in Table 13.A1 of the Appendix.

The global levels of protection of these three indicators are summarised in Table 13.2. The first aspect that needs to be pointed out is the coincidence between the expected biases for each indicator and the results obtained in the estimation of the different indicators. The UNT indicator (tariff level without weightings) shows the highest relative values for the given years, as usually occurs with this type of indicator.[24] The NT indicator (representing the weightings of the value of present imports, *ex-post*) has the lowest values. The RNT indicator (that weights the tariff with the amounts of the year before its introduction, *ex-ante*) displays mostly intermediate values. Broadly speaking, independently from the differences in the level, the three indicators offer a similar description of the evolution and the changes of nominal protection of the Spanish economy.

Table 13.2 clearly shows that the average profile of the three indicators

*Table 13.2* Total levels of nominal protection in Spain according to different indicators

| | *NT(1)* | *UNT(2)* | *RNT(3)* | *PROM(4)* | *NT/UNT(5)* | *NT/RNT(6)* |
|---|---|---|---|---|---|---|
| 1877 | 12.7 | 17.7 | n.a. | 15.2 | 0.72 | n.a. |
| 1889 | 11.0 | 16.7 | 12.0 | 13.2 | 0.66 | 0.91 |
| 1897 | 14.6 | 26.3 | 17.8 | 19.6 | 0.55 | 0.82 |
| 1913 | 14.9 | 25.2 | 18.4 | 19.5 | 0.59 | 0.81 |
| 1926 | 20.1 | 34.3 | 33.8 | 29.4 | 0.59 | 0.60 |

Source: Appendix 13.1.

confirms some features but contradicts others shown in Figure 13.1. The result for 1877 confirms the impression that when the *Restauración* period began, the level of protection was already significant.[25] It also confirms the low level of the year 1889, which highlights the moderate character of the General tariff law of 1882, modification of July 1883. and duty reductions produced by the eventual extension of the trade agreements during the 1880s.

The largest contradiction between the new indicators and those of Figure 13.1 can be seen for the year 1897. The NT for that year shows a moderate (but considerable) increase in relation with 1877 and 1889 levels of protection. Additionally, the rest of the indicators, and particularly the UNT, show that the NT indicator was particularly undervalued for that year. This gives coherence to the abrupt but temporary contraction that can be observed in Figure 13.1, which is the consequence of a decrease in imports of a significant group of products and their gradual replacement by other less protected products. The following years maintain a similar trend, although the NT is slightly less undervalued, meaning that protection in 1913 is maintained and a significant increase can only be observed for 1926.

Table 13.2 suggests that, although the protectionist tendency between 1877 and 1926 was clearly increasing, the changes in the level of protection came about in a cyclical fashion, with periods of increase and periods of moderation. For the years chosen in this study, a period of moderation (1877–89) and a period of relative stability (1897–1913) can be perceived. Between both periods comes the 1891 tariff, which gave rise to a significant change in the level of protection. Something similar occurs with the 1922 tariff, which raised the level of protection between 1913 and 1926 in a similar way. In this sense it is worth keeping in mind that 1897 would be low, as a year representative of the given period, whilst 1926 is, on the contrary, a high year if we consider the annual series of the NT indicator (see Figure 13.1).

This study confirms the existence of a biased NT indicator, both regarding the level as well as the evolution of protection in Spain in the years 1877 through to 1926. In this sense, it may be useful to compare the UNT indicator of protection (indicator without weightings) of Spain with that of another country, like Italy, for which we also have a similar estimation for those same years (see Figure 13.3). The new profile of this figure does not substantially change the comments about the singularity of the evolution of Spanish protection seen in Figure 13.2. However, it does provide some interesting additional information.

The profile of the Italian NT is similar to that of the European NT, unlike the Spanish case. The Spanish NT is higher than the Italian NT for every year, except for 1889, when Spanish protection was at its lowest and Italian at its highest level. The Spanish NT has a much higher starting point in 1877, and although it has a more cyclical profile, it has a growing

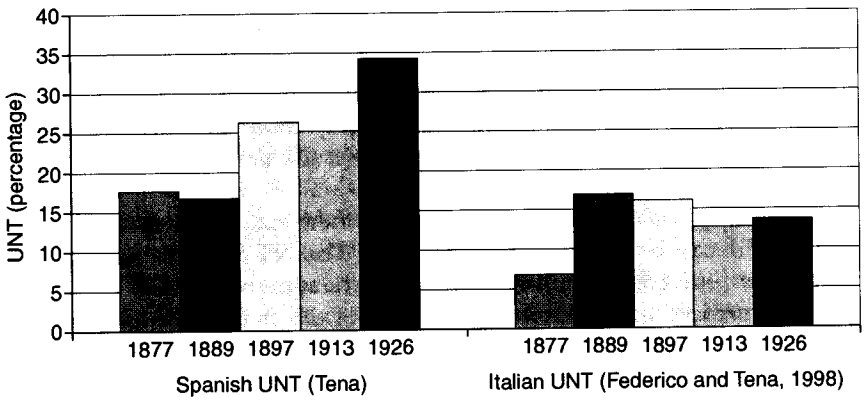


*Figure 13.3* UNT indicator (Unweighted Nominal Protection levels) in Spain and Italy 1877–1926 (source: Spain, Appendix 13.1. Italy, see Federico and Tena (1998, Table A1, p. 93).

tendency until 1926. In Spain, years of slight decrease (1889 and 1913) are followed by strong increases (1897 and 1922). On the contrary, Italy, starting at a low level, undergoes a change of level in 1889 followed by some years of moderation (even during the interwar years – until 1926).

Although the comparative study with the Italian case deserves, and will soon crystallise in, a monographic work, it is worth remembering that the Italian NT (as can be expected from a moderate level of protection), in contrast to the Spanish one (with a high level of protection), does not seem to be affected by a significant downward bias in comparison to the UNT and RNT indicators.[26] This reaffirms the statement that the observed bias in the NT indicator from 1897 onwards is not irrelevant, but is instead a consequence of the inability of the NT indicator to capture the important increase in protection produced from the 1890s onwards.

## The nature and the scope of protection in Spain

As shown in the first section, historiography has been intensely discussing the agricultural or industrial nature of Spanish tariff policy. A first and necessary condition to see if there was a tariff strategy favouring industry would consist in being able to demonstrate that this sector was more protected than the primary sector.[27]

Table 13.3 clearly shows that, in relative terms, protection apparently possessed an industrial profile from the beginning of the *Restauración* in the second half of the 1870s. The strong industrial character of 1877 is particularly relevant, as well as the fact that this profile decreases or increases accompanying reductions or expansions in the aggregate protection. In this way, coinciding with the reduction in the aggregate level of protection in

*Table 13.3* Relative levels of industrial and non-industrial nominal protection in Spain*

| | *NT* | *UNT* | *RNT* | *PROM* | *NT* | *UNT* | *RNT* | *PROM* |
|---|---|---|---|---|---|---|---|---|
| | *Industrial/non-industrial* | | | | *Industrial/non-industrial (excluding colonies)* | | | |
| 1877 | 135 | 125 | n.a. | 129 | 179 | 133 | n.a. | 156 |
| 1889 | 123 | 104 | 70 | 99 | 116 | 106 | 62 | 95 |
| 1897 | 95 | 131 | 133 | 120 | 87 | 136 | 117 | 113 |
| 1913 | 91 | 79 | 34 | 68 | 118 | 93 | 49 | 87 |
| 1926 | 112 | 114 | 116 | 114 | 154 | 130 | 139 | 141 |

Source: Industrial, manufactures plus semi-manufactures; Non-industrial, primary products. See Appendix, Table 1. Colonial products eliminated from the listings of the sources of Table 13.5.

the years 1889 and 1913, a loss of sharpness in the industrial profile of protection can be observed. This sharpness recovers in the moments of greatest increase of aggregate protection, as in the years 1897 and 1926.

For a better understanding of the factors that determine the global level of protection and its changes, it is necessary to take a detailed look at these main influencing factors. Table 13.A1 of the Appendix shows the results obtained for NT, UNT, RNT and the arithmetic average of these indicators (X). These have been classified using the GATT's classification. The profile that the arithmetic average of the indicators (X) shows will now be analysed along with the more conventional result offered by the weighted indicator of nominal protection (NT). In this sense, the extent to which the NT indicator tends to reduce the importance of those products with higher tariffs will be captured by the difference between the NT and the other indicators. Table 13.A2 of the Appendix explains the changes in the level of the NT indicator between two periods from the perspective of the main variables that have an influence on it: import demand, price and tariff changes. Consequently, the sectorial results of this table will be used to explain the influence of the tariff on changes in the import demand. Table 13.A2 of the Appendix corroborates the extent to which the difference between NT and X (the average of the three indicators) can be held responsible for the capacity of the tariff to impede the entry to those products or groups of products where a heavier tariff was levied.[28]

### *Primary products*

The NT indicator for primary products (which represent nearly 50 per cent of total imports during this period) reveals an increase in protection only slightly higher to that of the NT indicator for total imports. That is, a moderate protection in 1877 and 1889, a notable increase from 1897

onwards, that is maintained stable in 1913 and followed by a moderate increase in 1926 (see Table 13.A1 of the Appendix). In contrast to total imports, the largest differences between protection indices would be 1913 and not 1897. The average of the indicators in the group of primary products shows a more moderate increment between 1889 and 1897 (29 per cent) than in the latter and 1913 (33 per cent). The increase in the protection of the primary products was even more moderate between 1913 and 1926 (27 per cent).

The main culprit of this profile is the most important component, foodstuffs, which represent from 20 per cent to 30 per cent of the total imports during the period. This group represents agricultural foodstuffs, that is, agricultural products not used as primary products by the industrial sector. The NT indicator shows a relatively high protection for foodstuffs in 1877 (16.8 per cent) and a substantial decrease for 1889 (12.8 per cent). Later on, 1897 shows an important increase (18.6 per cent) and 1913 a smaller one (20.6 per cent), before reaching the 1926 level of 28.1 per cent. The profile that shows the protection of foodstuffs is radically modified if, instead of the NT, the other indicators are used (just as happens for primary products). If the average of the three indicators is used, the protection of foodstuffs in 1897 (18.9 per cent), although slightly superior to that of 1889 (15.4 per cent), remains similar to that of 1877 (17.8 per cent). In contrast, the average in 1913 (34.2 per cent) entails an 80 per cent increase from the 1897 level. This level is maintained and consolidated in 1926 (37 per cent). This result suggests an undervaluation of the conventional NT indicator for agrarian products and highlights the importance of carrying out a more detailed and rigorous analysis in order to explain it.

The reasons that explain the imperceptible change in the foodstuffs group of the NT indicator for the years 1897 and 1913 can be partly clarified by Table 13.A2 of the Appendix. In this table, it can be seen that foodstuffs suffered a tariff increase of 22 per cent, and that the shift in the imported quantity (−19.7 per cent) is mainly responsible for the NT indicator in these two years, displaying a variation of only 2 per cent. That is, the NT indicator of 1913 undervalues the highest tariffs by weighing them with the lower import levels, a problem which the other indicators avoid. This can be more closely observed if we pay attention to the relationship between the protection increase and the restriction on imports of significant foodstuffs in 1913, for example wheat flour, canned foodstuffs, milk, eggs, fish, lard, wine, liquor, and particularly foodstuffs such as chocolate, honey, glucose, sweets and those foodstuffs considered 'colonial' by the statistics (sugar, coffee, cocoa and spices).[29]

The nominal protection of wheat deserves special attention, since, given that it represented around 20 per cent of the total agricultural production in the first third of the twentieth century, it has monopolised the literature's views regarding the changes in agricultural protection during

the period of study, and especially between 1891 and 1913.[30] The tariff regime for wheat and its flours was fluctuated greatly between 1892 and 1913. Therefore, our choice of annual data for measuring protection may bias the relative protection of the sector. The data from GHER (1980) shows that, if we look at the average customs duties for wheat for the periods in which the 1891 and 1906 tariffs were in force, the tariffs on wheat were greater from 1906 to 1913 than in the preceding period.[31] Therefore, although the nominal individual protection for the years of this study has decreased from 43.7 per cent to 36.4 per cent, these results need to be qualified if we take into account the average changes in wheat protection during the period 1906–13.

The fact that the arithmetic average of the indicators presents an increase in the protection of foodstuffs between the years 1897 and 1913, in spite of the behaviour of the NT indicator, and at the same time that other indicators like the evolution of the protection of wheat confirm this result, backs the unorthodox hypothesis that the 1906 tariff favoured agricultural interests a lot more than the preceding tariffs. That is, the 1906 tariff reinforced agricultural protection, in contrast to the 1891 tariff, which raised it only slightly from its 1880s level. This merely brought back the high protection levels already present in the 1870s. Such an increase in the tariffs of foodstuffs was doubtlessly conditioned by the strong increase suffered by the group of so-called 'colonial' products, apparently for 'fiscal' (revenue-seeking) reasons, from the 1899 Fernández Villaverde reform onwards. What has just been observed is that there was also a tariff increase in other agricultural products and that, as a consequence, imports contracted, an effect that the NT indicator does not capture. The controversy lies partly in the apparent 'fiscal nature' of most parts of the agricultural protection that has just been analysed. The protectionist and non-fiscal nature of the 1906 and 1911 tariffs will be further analysed in the next section.

Primary products (such as cork, leather, wool, cotton, and so on) and minerals offer, as expected, a moderate protectionist profile in all of these years. Fuels experience an important increase in protection from 1877 (9.3 per cent) to 1889 (44.9 per cent), a protection that rises again in 1897 (50.6 per cent) and that falls again in 1913 to 33 per cent before moving up to 45 per cent in 1926 (see Table 13.A1 of the Appendix). Coal and coke minerals saw their protection double between 1889 (5 per cent for both) and 1897 (11.4 per cent and 9.7 per cent, respectively). This protection increased again slightly in 1913 (13.5 per cent and 11.4 per cent) and in 1926 (14.7 per cent and 12.5 per cent), but the main items responsible for the high levels of 1889 and 1897 were crude and rectified mineral oils, rectified natural oils and vaseline, which, in 1889, 1897 and 1913 offer indicators that are, in many cases, above the 100 per cent mark in nominal protection, decreasing only in 1926 (33.6 per cent). The fiscal motivation behind these tariff increases in mineral and natural oils and its

higher or lower protective effect are also a discussion topic in the next section. Non-ferrous metals obtain their lowest average protection level in 1889 (10.9 per cent), an important increase in 1897 (19 per cent), a slight reduction in 1913 and a return to a level of around 25 per cent in 1926.

### *Semi-manufactures*

Within semi-manufactures, there are two groups of products with an important economic significance: the iron and steel industry and a large section of the chemical industry. The average indicator for the semi-manufactures group had its lowest level in 1889 (10.7 per cent). Later on, a first important increase of nearly 50 per cent can be observed in 1897 (15.3 per cent). For 1913, the level is roughly maintained (14.5 per cent), followed by a strong increase of nearly 100 per cent in 1926 (30.9 per cent). The NT indices in 1897 and 1926 are undervalued in relation with the other indices and reduce the increment of protection showed by the average of the indicators.

Among its components, the category for iron and steel shows the highest average level of protection (and the most relevant increase as well). In 1877 and 1889, beginning from average levels of 20 per cent and 21.6 per cent, a first increase of over 50 per cent can be observed for 1897 (33.5 per cent). In 1913, the protection of iron and steel slightly decreases (27.1 per cent), a tendency which is broken with an increase of over 100 per cent in the result for 1926 (54.8 per cent). In this case, the NT indicator for iron and steel presents a higher profile than the average of the indicators in the years 1889 and 1913, and a lower profile than this average for 1897 and 1926. In the explanation of the increases of the NT indicator between 1889 and 1897, Table 13.A2 of the Appendix highlights again the contraction of the imported quantities (−4.2 per cent). This means that the NT indicator (as in previous occasions) tends to have a downward bias in the protection increases in iron and steel, as a consequence of the tariff laws of 1891 and particularly the law of September 1896.[32]

Chemical products had a much more moderate protection, especially before 1926. The average of the indicators displays a moderate profile, starting at 9.5 per cent in 1877, decreasing to 7.6 per cent in 1889, increasing then to 9.6 per cent in 1897 and 11.5 per cent in 1913. Table 13.A2 of the Appendix captures a strong contractive effect of imports between 1913 and 1926, and a somewhat less important one between 1897 and 1913. Likewise, the average of the indicators (11.5 per cent and 28 per cent) moves away from the conventional NT indicator (6.7 per cent and 10 per cent) in the respective years. This demonstrates that there was a strong contraction of imported quantities of heavily protected chemical products in 1926 as well as in 1913 (although to a lesser extent).

*Finished manufactured goods*

Manufactures do not have such a stable profile as semi-manufactures between 1877 and 1913, although they end up in a similar level in 1926. They begin with a significantly higher level in 1877 (20 per cent), go through a strong decrease and a strong increase (14.8 per cent and 25.8 per cent in 1889 and 1897, respectively), and, in contrast with the stability displayed by semi-manufactures, in 1913 industrial manufactures show a significant reduction of the tariff average (15.8 per cent). While semi-manufactures have their highest tariff protection in 1926 (31 per cent), manufactures display a 32 per cent protection, only slightly higher than the 1897 level (25.8 per cent).

The most significant difference between the NT indicator and the rest of the indicators occurs precisely in 1897 (once again, the year that the average has the highest protection increase of the period). Table 13.A2 of the Appendix sheds light on the important contraction of the demand for imports that joins the significant protection increase between the years 1889 and 1897. Thus, both the contraction of the demand and the differential of NT with the average of the three alternative indicators point out the strong contraction in imports, as a consequence of a significant increase in industrial protection from 1889 to 1897. On the contrary, from 1897 to 1913, Table 13.A2 of the Appendix shows a significant tariff decrease along with an increase in the price of manufactures, reinforcing a general decrease in the nominal protection levels of manufactures for 1913. As highlighted in Table 13.4, there seems to be little doubt that industrial products achieved less (relative and absolute) protection with the 1906 tariff than they achieved with the 1891 and 1926 tariffs, independently from the chosen indicator.

Among the industrial manufactures, group 3.1, 'capital goods', has the peculiarity of beginning with a lower protection (13.5 per cent in 1877) than the rest of manufactures, but nevertheless ending with a similar level (31.4 per cent in 1926). Between these two years, the level diminishes in 1889 (9.3 per cent), increases in 1897 (16.3 per cent), and is reduced again slightly in 1913 (13.9 per cent). Capital goods only have a strong increase in protection after the First World War. The category 'other capital goods' (including pieces and tools of iron, electrical material, steam engines and measuring machines) and the category 'specific industrial machinery' are the most important components of the group of imported capital goods and play the leading role in causing a certain contraction in the demand in 1913, thus maintaining a similar profile to their aggregate.[33]

Group 3.1, 'consumption goods', displays a different evolution to capital goods, starting off at a much higher level (21.9 per cent in 1877) and reaching a similar level (33 per cent in 1926). In the middle of the period, protection is reduced slightly (16.6 per cent in 1889) and then

grows again (nearly doubling to 30.1 per cent in 1897). Table 13.A2 of the Appendix explains the cause of this strong increment of industrial consumer protection between 1889 and 1897, which is mainly due to a strong tariff increase. In 1897 the differential of the NT indicator with the rest of indicators is quite impressive and very is well explained in Appendix 132 through the significant demand contraction (−8.3 per cent). This crowding-out effect on the demand in 1897 can be clearly observed in the case of textiles, one of its principal components. With a tariff increase of 16.4 per cent and a demand contraction of 8.4 per cent, textiles are, along with 'other consumer goods', the most affected by the undervaluation of the NT indicator for the year 1897. The demand contraction seems generalised between 1889 and 1897, with textiles dropping from 13.2 per cent to 7.6 per cent of total Spanish imports. The average of the indicators shows how textiles, starting with a high level of protection (22.9 per cent in 1877, similarly to their aggregate), moderate this level in 1889 (17.3 per cent), reach their maximum in 1897 (32.9 per cent), later drop back down in 1913 (19.3 per cent) to finish off in 1926 with a similar, though slightly smaller, result than in 1897 (30.7 per cent). The 'clothing industry' shares with 'fabrics and threads' a high starting point in 1877 (22.6 per cent), but, as in the case of steel, chemistry and capital goods, reaches its maximum level at the end of the period, in 1926 (40.9 per cent).

To sum up: nominal protection levels in Spain at the end of the 1870s were relatively high, either compared with subsequent national levels or with other countries. This high starting point can be specially attributed to the prominent role of the protection of consumption manufactures before the *Restauración*. The decade of the 1880s brings about a decrease in protection due to the combined effects of the 1882 tariff, the extension of preferential agreements and the 1883 law. Later on, keeping in mind the high starting point of the 1870s, it can be argued that nominal protection in Spain has it most important break-off after the 1891 tariff law was set. The magnitude of this tariff increase depends on the type of indicator used. Nevertheless, in relative terms, there is no doubt that the 1891 tariff represented a significant protection increase and that this increase was lead by the industrial manufactures. The 1906 tariff maintains the level of protection, in global terms; protection only increasing again significantly in 1926.

The stabilisation of protection in 1906 is the result of two opposite tendencies; on the one hand, the significant moderation in the protection of industrial manufactures. On the other, the equally important increase in the protection of agricultural products. The 1922 tariff maintains the protection obtained by the agricultural products and recovers the protection lost by industrial manufactures with the 1906 tariff. Thus, in relative terms, the 1891 and the 1922 tariffs gave the industry a higher nominal protection whilst, on the contrary, the 1906 tariff gave it to agricultural

products (particularly foodstuffs). The design of the industrial protection implemented by the 1891 and 1922 tariff laws had some important differences: whilst the first one mainly protected traditional industries such as textiles and iron, the second was targeted particularly towards those manufacturing sectors that produce finished goods (clothing and other consumption manufactures) and to the new sectors (chemistry, capital goods and machinery).

The importance of the 'quantity, price and tariff effects' on the changes in nominal protection have been analysed from the data of Table 13.A2 of the Appendix. The price increase played a buffering role only in the period 1913–22, and this affected all sectors except capital goods. In contrast, in the period 1897–1913, the price effect worked in favour of the protection increase in manufactures and semi-manufactures. The tariff increases were the main causes of the upward tendency of protection in all the periods and in most sectors, with the exception of the 1877–89 period in which nominal protection was moderate. The other counter-vailing effect during 1897–1913 came from semi-manufactured imports in addition to the role played by other types of manufactures. In this period, an important decrease in tariffs occurred in both sectors (more markedly in consumption goods, machinery, and iron and steel), counteracted by the prominence of tariffs in the primary sector, or, more precisely, foodstuffs. The 'quantity effect' is negative for all periods and thus tends to moderate the final increase in the NT indicator. This negative effect reflects, on the one hand, the changes in preferences and in the prices of the products. On the other, it also reflects the effect produced by the tariff, shifting demand towards less-protected products. That is, it serves as an indicator of the accuracy, and extends undervaluation problems of, the NT indicator for certain sectors.

The greatest differences among alternative indicators have been found in the years where significant tariff increases have been accompanied with import contractions. This is particularly obvious for manufactures (particularly in consumption manufactures) in 1897, for primary products (especially in foodstuffs) in 1913, and for semi-manufactures (especially for chemical products) in 1926. In all these cases, the rest of the indicators corroborate an undervaluation of the NT indicator as a consequence of the import crowding-out effect from high to low dutiable imports. Therefore, as expected, the conventional NT indicator biases the results, in most cases moderating the increases of nominal protection regarding their theoretical projected values. In this sense, the availability of other indicators allows us to offer alternative and more reliable interpretations to those that have been regularly presented by the historiographic literature.

## The fiscal and agricultural components of the 1906 tariff

The literature agrees in underlining how, due to the loss of Cuba the group of 'colonial imports' (i.e. colonial foodstuffs) concentrated the interests of the reformers in view of acquiring new sources of revenue, as the tariff reform introduced by Fernández Villaverde in 1899 shows.[34] What follows is an analysis of the weight (and therefore, of the effects) of the so-called 'fiscal tariffs' in the changes of the composition of protection between the 1891 and the 1906 tariff laws.

The previous section highlighted the significant protection increase in favour of the agricultural sector in comparison with the industrial manufactures in 1913 (both in relative and absolute terms). First, therefore, it is necessary to assess to what extent this occurs as a consequence of tariff increments for 'colonial products'. Second, the complementarities between the fiscal reasons (which tend to increase tariffs in some products as a source of income) and the protectionist effects on the economy are to be discussed.

Table 13.4 summarises the strong protective increase that the so-called colonial products suffered between 1897 and 1913, as well as how their low elasticity of demand allowed an important improvement of the tariff revenue obtained by the group. Both the revenue and the tariff rate (measured by the NT) were multiplied by a factor of (nearly) ten, which means that the level of the imports of the group remained practically constant. The revenue of dutiable colonial products represented nearly one-third of the total revenue increase in 1913.[35]

The previous section allowed us to check that the use of other indicators apart from the NT highlighted the existence of a strong swing in the protectionist policy between the Cánovas and Salvador tariffs, turning from manufactures to agricultural foodstuffs. Two small tests will now be carried out to evaluate the role of the supposed 'fiscal' intentions, to see their importance on the changes in the protection that occurred between 1897 and 1913. To do this, a simple hypothetical scenario will be

*Table 13.4* Changes in protection and tariff revenue from 'colonial products'

| | *'Colonial' NT (%)* | *Total NT (%)* | *Colonial products tariff revenue (millions ptas)* | *Total tariff revenue (millions ptas)* |
|---|---|---|---|---|
| 1897 | 7.4 | 14.6 | 3.0 | 105.4 |
| 1913 | 67.9 | 14.9 | 30.3 | 189.6 |

Source: *Estadísticas del Comercio Exterior.*

Notes
Colonial group composed in 1897 by: foreign sugar, glucose, liquid caramel, colonial sugar, foreign cocoa, colonial cocoa, ground cocoa, foreign coffee, colonial coffee, ground coffee, Ceylan cinnamon, other cinnamons, cloves, nutmegs with and without, pepper, tea, vanilla.

developed with the intention of testing what would have happened to the relative protection between the main sectors concerned if tariffs on this group of products (characterised as 'fiscal' by the literature) had been maintained equal between 1897 and 1913 – the contrafactual which cannot be applied to the foodstuffs sector.

The results presented in Table 13.5 clearly show that the so-called colonial products played an important role for explaining the abrupt change from a tariff structure visibly favourable to industrial products to one that strongly favoured agricultural products in the Spanish tariff policy. Section (a) shows what really happened (including colonial products) and therefore offers the same results already discussed in the previous section. Section (b) explains what would have happened in 1913 if the tariffs on colonial products had been maintained as in 1897 (assuming a constant demand as well). Section (c) simulates what would have happened with the relative protection indicators if colonial products had been absent on both years. The last two sections of this chapter reduce the (net) average level of protection in 1913, offering for foodstuffs a similar level of protection as in 1897.

If we assume that colonial products are mainly 'fiscal products', without protective effects, and that they should therefore be excluded from the calculation of the protection, the conclusions are as follows. First, it can be observed that the group of colonial products increases the total level of protection by three percentage points in 1913, whilst it would reduce it slightly in 1897. Second, the exclusion or the maintenance of tariff rates on colonial products allows us to observe that the (important) group of non-colonial foodstuffs at least maintained its level of protection between these two periods. If we add to this the significant loss of protection of the manufacturing sector between these years, there is no doubt that the 1906 tariff improved the relative position of the agricultural sector (in comparison with the manufacturing sector). The most significant fact that this test proves is that, whether we take the extreme assumption of excluding colonial products or not, the decrease in the protection level of manufactures appears to be the most relevant factor when it comes to explaining the relative improvement of the protection of the agricultural sector between 1897 and 1913.

Although the literature has focused on the colonial products, the characterisation of the so-called revenue-generating products (on which tariffs are levied with the aim of increasing revenue and not for protecting any products) is a wider matter. The problem lies in the fact that any product of general consumption with a high tariff and a low and elastic demand may be considered a fiscal product (as occurred with wheat in 1906).[36] In addition, both groups of products have direct or indirect effects on welfare. The inclusion or non-inclusion of exotic products in the total tariff average is part of a recent debate.[37] The existence of some domestically produced substitutes of colonial products allows us to suggest that some exotic imported products are more fiscal than others. This is quite

*Table 13.5* Impact of the so-called 'colonial products' on the relative protection indicators (arithmetic average of the NT, UNT and RNT indicators), in %

| | *a) With colonial goods* | | | | *b) Colonial duties 1897–1913* | | | | *c) Without colonial goods* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Alim.* | *Mfr.* | *Total* | | *Alim.* | *Mfr.* | *Total* | | *Alim.* | *Mfr.* | *Total* | |
| In % | (1) | (2) | (3) | (1) ÷ (2) | (1) | (2) | (3) | (1) ÷ (2) | (1) | (2) | (3) | (1) ÷ (2) |
| 1897 | 18.9 | 25.8 | 19.6 | 0.73 | 18.9 | 25.8 | 19.6 | 0.73 | 21.8 | 25.8 | 20.3 | 0.85 |
| 1913 | 34.2 | 15.9 | 19.5 | 2.2 | 19.5 | 15.9 | 16.5 | 1.2 | 21.8 | 15.9 | 16.3 | 1.38 |

Sources: Simulation obtained from the same database as the one used for the Appendix 13.1.

Notes
Colonial products are those denominated as such in the 1897 official statistics: foreign sugar, glucose, liquid caramel, colonial sugar, foreign cocoa, colonial cocoa, ground cocoa, foreign coffee, colonial coffee, ground coffee, Ceylan cinnamon, other cinnamons, cloves, nutmegs with and without, pepper, tea, vanilla.

*Table 13.6* Impact of the exclusion of a group of 'fiscal products' on the relative protection indicators (arithmetic average of the NT, UNT and RNT indicators)

| | *a) Fiscal goods included* | | | | *b) Fiscal goods excluded* | | | |
|---|---|---|---|---|---|---|---|---|
| | *Food* | *Mfr.* | *Total* | | *Food* | *Mfr.* | *Total* | |
| | (1) | (2) | (3) | (1) ÷ (2) | (1) | (2) | (3) | (1) ÷ (2) |
| 1897 | 18.9 | 25.8 | 19.6 | 0.73 | 21.1 | 25.8 | 19.1 | 0.82 |
| 1913 | 34.2 | 15.9 | 19.5 | 2.2 | 30.7 | 15.9 | 17.5 | 1.9 |

Source: Simulation based on the same database used in Table 13.3.

an arbitrary decision, but is based on an intuitive economic criterion, rather than on an administrative one.[38]

This last exercise confirms, on general terms, the reflections that arose from the exclusion of colonial products in Table 13.6. With the excluded fiscal products, some agricultural products with high tariffs but without domestic production are maintained. Obviously, this implies that agricultural protection in 1913 was even more important than in Table 13.5. Consequently, Table 13.6 confirms that, between 1897 and 1913, an increase in the nominal agricultural protection existed not only for the group of agricultural consumption products, but also for the selected group of imported agricultural products (without domestic production). Hence, this second test supports the hypothesis of the existence of a change in favour of agriculture in relation to the previous period, in absolute terms and in relation to industry.

## Conclusions

The evidence presented in the previous sections partly contradicts some of the firmly held opinions of the recent literature over the profile and evolution of tariff protection in Spain during the *Restauración* period. This study is the first to offer a global vision of the evolution of nominal protection using a new group of alternative indicators, both at an aggregate and inter-sectorial level. The new indices show that:

1 The conventional tariff average, weighted by imports, produces a downward bias on Spain's general nominal protection profile during the *Restauración* period.
2 This bias particularly affects manufactures, as may be reasonably expected, because of their higher demand elasticity.
3 The downward bias is bigger for the periods after the main tariff laws that increased the protection of manufactures, as shown by the results for 1897 and 1926, years which respectively follow the 1891 and 1922 tariff reforms by Cánovas del Castillo and Cambó.[39]

4 The tariff law of 1906 moderates the protection of manufactures and increases that of foodstuffs. The former comes about because of the price increase of manufactures, combined with the more moderate tariffs on these. The latter, because of the increment of agricultural tariffs, combined with strong increases of tariffs on exotic products (for fiscal reasons) during the turn of the century.

It may be advanced that a future study will present indicators of effective protection whose results on relative sectorial protection are very similar to those presented here.[40] Estimations have been made only for a few years, but a projection of the estimated biases over the whole period allows the following reasonable hypotheses to be made.

Although protection after 1875 follows a cyclical upward profile, not every cycle is equal. The most marked one comes after a period of a certain protectionist moderation in the 1880s, with the arrival of the Cánovas tariff of 1891. The 1906 tariff seems to maintain protection, which then continues its upward tendency from the 1920s onwards with the 1922 tariff, although this second cycle has a smoother profile than that observed for the 1890s.

Broadly speaking, it can be said that protection during the whole period of the *Restauración* has a markedly industrial bias. This can be traced back to its beginning in 1877. The moderation or accentuation of this industrial bias seems to be connected to the decrease or increase of the general level of aggregate protection: industry clearly wins with those tariffs that raise protection, whilst agriculture does it with those that relax it. Although protection during the *Restauración* had an industrial nature, the Cánovas tariff of 1891 had a much higher industrial bias than the Salvador tariff of 1906, contrary to what most recent studies maintain.

These facts, which have been here contrasted, raise doubts on certain widespread hypotheses in the Spanish historiography. The continuity of the industrial nature highlighted in this study clashes head-on with the interpretation of the 'forceful' or 'fortuitous' nature of the protectionist turn of 1891 which has been very popular recently amongst Spanish economic historians.[41] This conclusion does not contradict the importance of the efforts of the Spanish Administration in defence of the exporter's interests, nor with the fact that the failure of negotiations with France played a role in reinforcing the positions of the protectionist industrial sectors. The negotiation of the trade agreement with France doubtlessly influenced the design of the 1891 tariff, but other forces determined its final configuration by stressing its industrial nature and maintaining it for such a long period of time.[42]

The facts show that, while the Salvador tariff of 1906 readjusted itself and slightly moderated industrial protection, agricultural products gained a certain prominence. This came about through an increase in the number and the level of protected products, as well as from the significant

increase in the protection of the so-called colonial products. This confirms that, in both cases, increases in the protection of primary products came about because of the growing state pressure to raise more revenue after the Villaverde reform of 1899. That the fiscal pressure contributed to increasing agricultural tariffs does not mean that it was a primary factor for determining the nature of Spanish protectionism at the beginning of the twentieth century. Proof of this is given by the Cambó tariff of 1922, where the generalised tariff increase stands out in all sectors and in the renewed prominence of the industrial tariff.

Therefore, there was certain continuity in the protectionist policy of the *Restauración* before and after the 1891 Cánovas tariff, and, contrary to what has been generally believed until recently, the evidence points towards the strengthening of the idea that Spanish protection had, to a large extent, an industrial bias from the beginning of the given period. This opens up the discussion of the greater or smaller degree of continuity of the protective level of the Spanish economy between the *Restauración* and the *Sexenio Liberal* (1868–74) thus raising the question of whether the international turnaround from *Base Quinta* to the Figuerola tariff and its repeal in 1875 materialised in actual fact.

Consequently, the traditional hypothesis suggested by Vicens Vives seems strengthened; namely, that the 1891 Cánovas tariff reinforced the interests of the traditional industrial sectors of textiles and steel (the former in 1891 and the latter particularly after 1896), and that these sectors led the coalition with the agricultural representatives.[43] There is no doubt that many unintentional factors, such as trade relations, fiscal needs or the economic climate, influence the decision-making process of devising tariff structures, and that all these factors contribute to weaken or strengthen the various conflicting interest groups. The political mechanism that gave rise to this result, through pressure from the main interest groups or from the lack of it, is without any doubt one of the most interesting debates that this research opens up.

# Appendix

*Appendix 13.1* Spanish tariff average alternative measures 1877–1926 (GATT classification)

| | *1877* | | | | *1889* | | | | *1897* | | | | *1913* | | | | *1926* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *NT (%)* | *UNT (%)* | *RNT* | *X (%)* | *NT (%)* | *UNT (%)* | *RNT (%)* | *X (%)* | *NT (%)* | *UNT (%)* | *RNT (%)* | *X (%)* | *NT (%)* | *UNT (%)* | *RNT (%)* | *X (%)* | *NT (%)* | *UNT (%)* | *RNT (%)* | *X (%)* |
| 1.1 Foodstuffs | 16.8 | 18.7 | – | 17.8 | 12.8 | 13.6 | 19.6 | 15.4 | 18.6 | 19.1 | 19.1 | 18.9 | 20.6 | 41.2 | 40.7 | 34.2 | 28.1 | 42.3 | 40.5 | 37.0 |
| 1.2 Raw materials | 1.9 | 5.0 | – | 3.4 | 1.0 | 3.3 | 1.0 | 1.8 | 3.3 | 5.6 | 2.7 | 3.9 | 2.2 | 7.9 | 2.0 | 4.1 | 2.7 | 9.0 | 3.0 | 4.9 |
| 1.3 Minerals | 2.8 | 18.3 | – | 10.6 | 1.3 | 17.4 | 3.2 | 7.3 | 4.7 | 4.9 | 3.6 | 4.4 | 3.0 | 7.5 | 2.6 | 4.4 | 2.4 | 6.9 | 7.3 | 5.5 |
| 1.4 Fuels | 11.7 | 6.9 | – | 9.3 | 20.3 | 69.8 | 44.6 | 44.9 | 30.2 | 88.9 | 32.7 | 50.6 | 26.3 | 47.1 | 25.9 | 33.1 | 35.0 | 39.6 | 61.5 | 45.4 |
| 1.5 Non-ferrous metals | 14.2 | 16.9 | – | 15.6 | 12.3 | 10.7 | 9.7 | 10.9 | 17.8 | 17.0 | 22.4 | 19.0 | 12.7 | 14.8 | 21.1 | 16.2 | 19.8 | 29.7 | 25.2 | 24.9 |
| 2.1 iron and steel | 17.5 | 20.3 | – | 18.9 | 29.0 | 29.3 | 6.5 | 21.6 | 32.1 | 37.0 | 31.4 | 33.5 | 30.4 | 30.0 | 20.8 | 27.1 | 56.6 | 49.0 | 107 | 70.9 |
| 2.2 Chemicals | 7.0 | 10.5 | – | 8.8 | 5.8 | 11.3 | 5.5 | 7.6 | 8.2 | 12.3 | 8.4 | 9.6 | 6.7 | 19.7 | 8.2 | 11.5 | 10.0 | 30.1 | 43.9 | 28.0 |
| 2.3 Others semimanuft. | 7.5 | 15.7 | – | 11.6 | 7.0 | 14.7 | 6.3 | 9.3 | 8.0 | 19.4 | 11.0 | 12.8 | 9.6 | 21.9 | 5.7 | 12.4 | 14.5 | 34.5 | 13.5 | 20.8 |
| | 0.0 | 0.0 | – | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.1 Equipment goods | 9.8 | 17.3 | – | 13.5 | 7.5 | 14.5 | 6.0 | 9.3 | 13.5 | 23.3 | 15.3 | 17.4 | 13.6 | 21.9 | 6.3 | 13.9 | 27.2 | 34.6 | 32.5 | 31.4 |
| 3.1.1 Machinery | 5.7 | 8.7 | – | 7.2 | 5.2 | 8.7 | 2.5 | 5.5 | 16.8 | 33.8 | 14.8 | 21.8 | 13.9 | 18.7 | 1.9 | 11.5 | 29.6 | 37.0 | 29.0 | 31.9 |
| 3.1.2 Office equipment | 0.0 | 0.0 | – | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 14.8 | 14.8 | 0.0 | 9.8 | 29.6 | 26.2 | 0.0 | 18.6 |
| 3.1.3 Road vehicles | 26.3 | 26.0 | – | 26.1 | 22.1 | 21.6 | 21.9 | 21.9 | 10.5 | 20.0 | 25.2 | 18.6 | 22.8 | 27.1 | 19.7 | 21.4 | 21.5 | 37.5 | 22.0 | 27.0 |
| 3.1.4 Other equipment goods | 17.3 | 18.0 | – | 17.7 | 10.9 | 14.5 | 11.4 | 12.3 | 10.0 | 21.2 | 15.3 | 15.5 | 13.1 | 23.5 | 6.1 | 14.2 | 30.5 | 34.0 | 39.2 | 34.6 |
| 3.1.5 Other durable cons. goods | 11.0 | 14.9 | – | 13.0 | 12.6 | 15.7 | 9.5 | 12.6 | 11.0 | 19.9 | 13.1 | 14.7 | 9.4 | 20.0 | 7.5 | 12.3 | 17.8 | 26.0 | 16.2 | 20.0 |
| 3.2 Consumer goods | 19.7 | 24.2 | – | 21.9 | 16.6 | 18.4 | 14.9 | 16.6 | 23.0 | 35.6 | 31.8 | 30.1 | 20.3 | 25.4 | 10.6 | 18.8 | 23.3 | 37.9 | 37.4 | 32.9 |
| 3.2.1 Textiles | 19.9 | 26.0 | – | 22.9 | 17.1 | 19.9 | 14.9 | 17.3 | 24.7 | 40.6 | 33.5 | 32.9 | 20.3 | 30.2 | 7.5 | 19.3 | 20.6 | 36.7 | 34.8 | 30.7 |
| 3.2.2 Clothing | 20.9 | 24.4 | – | 22.6 | 18.8 | 19.8 | 28.3 | 22.3 | 31.5 | 32.4 | 24.9 | 29.6 | 25.0 | 25.5 | 0.0 | 16.9 | 46.0 | 46.0 | 30.8 | 40.9 |
| 3.2.3 Other | 17.5 | 19.6 | – | 18.5 | 13.2 | 13.0 | 13.1 | 13.1 | 16.6 | 19.3 | 23.0 | 19.6 | 19.5 | 20.7 | 22.7 | 21.0 | 32.2 | 38.4 | 46.8 | 39.1 |
| 1 Primary goods | 10.9 | 15.3 | – | 13.1 | 10.0 | 16.3 | 14.2 | 13.5 | 15.1 | 21.6 | 15.7 | 17.5 | 15.5 | 29.4 | 24.8 | 23.2 | 18.9 | 31.3 | 31.5 | 27.3 |
| 2 Semi-manufactures | 11.1 | 13.8 | – | 12.5 | 10.6 | 15.4 | 6.1 | 10.7 | 10.6 | 21.3 | 13.9 | 15.3 | 12.0 | 22.9 | 8.5 | 14.5 | 16.9 | 35.5 | 40.2 | 30.9 |
| 3 Manufactures | 17.6 | 22.4 | – | 20.0 | 13.8 | 17.6 | 13.1 | 14.8 | 18.4 | 32.4 | 26.7 | 25.8 | 15.5 | 23.6 | 8.5 | 15.9 | 26.0 | 35.9 | 33.9 | 31.9 |
| Total | 12.7 | 17.7 | – | 15.2 | 11.0 | 16.7 | 12.0 | 13.2 | 14.6 | 26.3 | 17.8 | 19.6 | 14.9 | 25.2 | 18.4 | 19.5 | 20.1 | 34.3 | 33.8 | 29.4 |
| Only dutiable goods | – | 18.7 | – | – | – | 16.8 | – | – | – | 26.3 | – | – | – | 25.2 | – | – | – | 21.4 | – | – |
| Without colonials | 10.7 | 17.5 | – | 14.1 | 10.2 | 16.6 | 12.7 | 13.2 | 12.6 | 26.3 | 19.2 | 19.4 | 12.4 | 23.6 | 13.6 | 16.5 | 13.8 | 25.5 | 24.1 | 21.1 |
| Foodstuffs without colonials | 13.3 | 17.5 | – | 15.4 | 15.1 | 12.4 | 25.3 | 17.6 | 22.9 | 17.3 | 25.0 | 21.7 | 13.7 | 33.2 | 28.0 | 25.0 | 12.6 | 26.5 | 23.9 | 21.0 |
| Primary without colonials | 5.4 | 14.4 | – | 9.9 | 7.5 | 15.8 | 15.8 | 13.0 | 1.2 | 21.0 | 17.8 | 16.7 | 9.9 | 24.4 | 17.4 | 17.2 | 9.7 | 20.7 | 20.3 | 16.9 |
| MANU + SEMIMANU. | 14.6 | 19.2 | – | 16.9 | 12.3 | 16.8 | 9.9 | 13.0 | 14.4 | 28.4 | 20.8 | 21.2 | 14.1 | 23.3 | 8.5 | 15.3 | 21.2 | 35.7 | 36.6 | 31.2 |
| INDUSTR/NO INDUS. | 135 | 125 | – | 130 | 123 | 104 | 70 | 99 | 95 | 131 | 133 | 120 | 91 | 79 | 34 | 68 | 112 | 114 | 116 | 114 |
| INDUST/IND. without COL. | 179 | 133 | – | 156 | 116 | 106 | 62 | 95 | 87 | 136 | 117 | 113 | 118 | 93 | 49 | 87 | 154 | 130 | 139 | 141 |

*Appendix 13.2* Decomposition of factors causing changes in Spanish nominal protection ($NT - NT_{t-1}$)

| | *1889–1877* | | | | *1897–1889* | | | | *1913–1897* | | | | *1926–1913* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Total (%)* | *Quant (%)* | *Price (%)* | *Tariff (%)* | *Total (%)* | *Quant (%)* | *Price (%)* | *Tariff (%)* | *Total (%)* | *Quant (%)* | *Price (%)* | *Tariff (%)* | *Total (%)* | *Quant (%)* | *Price (%)* | *Tariff (%)* |
| 1.1 Foodstuffs | −4.0 | −3.6 | −3.2 | 2.8 | 5.8 | −3.0 | 2.6 | 6.2 | 2.0 | −19.7 | −0.4 | 22.0 | 7.5 | 0.6 | −12.9 | 19.9 |
| 1.2 Raw materials | −0.9 | −0.2 | 0.1 | −0.8 | 2.3 | 0.1 | 0.5 | 1.7 | −1.1 | 0.5 | −0.3 | −1.3 | 0.4 | 0.8 | −1.1 | 0.8 |
| 1.3 Minerals | −1.5 | −0.8 | −1.1 | 0.4 | 3.4 | 0.6 | 0.5 | 2.3 | −1.7 | −12.0 | 12.4 | −2.1 | −0.6 | −2.5 | −2.3 | 4.2 |
| 1.4 Fuels | 8.6 | −63.1 | 38.8 | 32.9 | 9.9 | −1.2 | −1.4 | 12.4 | −3.9 | −0.1 | 0.6 | −4.3 | 8.7 | 7.3 | −33.8 | 35.2 |
| 1.4 Non-ferrous metals | −1.9 | 3.0 | −0.4 | −4.5 | 5.4 | −0.4 | −4.2 | 10.0 | −5.0 | −4.8 | −3.6 | 3.3 | 7.1 | −2.3 | −3.0 | 12.5 |
| 2.1 Iron and steel | 11.5 | −0.5 | 23.0 | −11.0 | 3.1 | −4.2 | 4.9 | 2.4 | −1.7 | 1.0 | 8.7 | −11.3 | 26.2 | −0.4 | −50.0 | 76.7 |
| 2.2 Chemicals | −1.3 | 0.2 | 0.0 | −1.5 | 2.4 | −1.1 | 0.9 | 2.6 | −1.5 | −6.4 | 5.0 | 0.0 | 3.2 | −19.5 | −14.5 | 37.2 |
| 2.3 Others semimanuft. | −0.5 | −3.6 | 4.3 | −1.2 | 0.9 | −1.9 | −1.2 | 4.0 | 1.7 | −11.7 | 15.6 | −2.2 | 4.9 | 2.8 | −1.9 | 3.9 |
| 3.1 Equipment goods | −2.3 | −1.5 | 3.0 | −3.8 | 6.0 | −0.4 | −1.3 | 7.7 | 0.1 | −5.6 | 12.9 | −7.2 | 13.5 | −9.1 | 3.7 | 18.9 |
| 3.1.1 Machinery | −0.6 | 0.7 | 1.9 | −3.2 | 11.7 | 1.1 | 0.9 | 9.7 | −3.0 | −5.9 | 17.9 | −15.0 | 15.7 | −0.4 | 1.0 | 15.1 |
| 3.1.2 Office equipment | – | – | – | – | – | – | – | – | 14.8 | 14.8 | 0.0 | 0.0 | 14.8 | 29.6 | 0.0 | −14.8 |
| 3.1.3 Road vehicles | −4.3 | 0.8 | −0.7 | −4.4 | −11.6 | −6.5 | −8.2 | 3.2 | 12.3 | 0.4 | 2.6 | 9.3 | −1.3 | −7.5 | 7.1 | −0.8 |
| 3.1.4 Other equipment goods | −6.4 | −4.3 | 3.8 | −5.9 | −0.9 | −0.9 | −4.3 | 4.3 | 3.1 | −4.6 | 11.7 | −4.0 | 17.4 | 19.1 | 10.3 | 26.1 |
| 3.1.5 Other durable cons. goods | 1.6 | 2.2 | 0.9 | −1.5 | −1.6 | −2.3 | 0.1 | 0.5 | −1.5 | −3.7 | 5.6 | −3.5 | 8.3 | 7.8 | −6.2 | 6.7 |
| 3.2 Consumer goods | −3.1 | 1.5 | 0.2 | −4.8 | 6.4 | −8.3 | −0.6 | 15.3 | −2.8 | 4.2 | 5.5 | −12.4 | 3.1 | −1.8 | −12.2 | 17.1 |
| 3.2.1 Textiles | −2.7 | 1.8 | 0.4 | −5.0 | 7.5 | −8.4 | −0.5 | 16.4 | −4.4 | −1.5 | 14.3 | −17.2 | 0.3 | −2.4 | −11.7 | 14.5 |
| 3.2.2 Clothing | −2.1 | 0.2 | −9.7 | 7.4 | 12.7 | 0.0 | 6.6 | 6.0 | −6.5 | −1.4 | 26.3 | −31.5 | 21.0 | −1.8 | 17.1 | 5.8 |
| 3.2.3 Other | −4.2 | 0.7 | −0.7 | −4.3 | 3.4 | −5.2 | −1.1 | 9.8 | 2.9 | 7.2 | −10.4 | 6.1 | 12.7 | 1.2 | −15.8 | 27.3 |
| 1 Primary goods | −0.8 | −3.6 | −0.5 | 3.3 | 5.1 | −2.3 | 1.8 | 5.6 | 0.4 | −8.0 | −1.3 | 9.6 | 3.4 | −0.8 | −11.8 | 16.0 |
| 2 Semi-manufactures | −0.5 | −0.2 | 4.7 | −5.0 | 0.0 | −3.1 | −9,1 | 3.2 | 1.4 | −5.5 | 9.0 | −2.1 | 4.9 | −11.7 | −11.5 | 28.1 |
| 3 Manufactures | −3.8 | −0.4 | 1.1 | −4.6 | 4.6 | −7.3 | −1.1 | 12.9 | −2.9 | −1.7 | 8.6 | −9.8 | 10.5 | −6.0 | −1.9 | 18.4 |
| Total | −1.7 | −2.4 | 1.4 | −0.7 | 3.6 | −4.1 | 0.9 | 6.8 | 0.3 | −7.2 | 3.6 | 3.8 | 5.2 | −3.7 | −10.0 | 18.9 |
| MANU + SEMIMANU | −2.3 | −0.7 | 3.2 | −4.8 | 2.1 | −5.8 | −0.5 | 8.5 | −0.4 | −3.3 | 8.8 | −5.9 | 7.1 | −9.2 | −6.2 | 22.5 |

Notes

$NTt - NTt - 1 = [NTt - RNPt] + [RNPt - RNTt] + [RNTt - NTt - 1]$

CHANGE NT = QUANTITY + PRICE + TARIFF

## Notes

1 Parts of this chapter have been presented in different versions at various seminars: at the International University Menéndez y Pelayo, the Fifth Congress of the Association of Economic History, the Eleventh International Economic History Association Congress and at the universities of Valencia and Carlos III of Madrid. I am very grateful for the comment and critique of, amongst others, Concha Beltrán, Giovanni Federico, Pedro Fraile, Agustín Llona, Elena Martínez, Jordi Palafox, Leandro Prados de la Escosura, Pablo Sánchez León and Daniel Tirado, as well as for the useful comments of an anonymous referee. I cannot leave out my most sincere thanks to Laura Cervero, Raimundo Fernández Cuesta and Cristina Cambeiro for their collaboration in the preparation of the database. This project has been financed with a scholarship of the Spanish Ministry of Education CGYCIT: PB 94/073. This is a revised version (February 2005) of the article published in Spanish by *Revista de Historia Económica* 3 (1999), pp. 579–621. Translation financed by SEJ2004-05894 MEC. Translator: Alejandro Díaz Blanco.

2 As Raymond Carr points out, 'the demand for protectionism was only one aspect of the economic pessimism that followed the end of the boom of the *Restauración*' (Carr, 1990: 381, translated from the Spanish edition). This pessimism is shared by the literature in arguing against alternatives to protectionism.

3 'It was inconceivable that politicians would risk the political and social consequences of sacrificing the Castilian agriculture and the Basque industry' (Carr, 1990: 381, translated from the Spanish edition).

4 Perhaps Flores de Lemus' protectionist position was one of the most conscientious of the costs implied. He highlighted many times that industrial protection was not for free and was paid by the agricultural exporters. His preoccupation for the rhetoric position of 'integral protectionism' has been pointed out many times, given that this implied excessive protectionist measures that damaged the agricultural exports without increasing the effective protection of the industry. In essence, however, he shared the pessimist position that the industry would disappear without protection, and thus favoured such measures. 'So abolish that agricultural export industry and all that stuff and the industrial constitution of Biscayans and Catalans will collapse. But destroy the Basque Country and Catalonia and you shall see what happens to Spanish agriculture...', only to continue saying 'With the construction of this combination of industry and export-oriented agriculture, each of the farmers that pay the protection will naturally have less than if that protection did not exist. But, altogether, they will have more than if the industry did not exist. And altogether with the Nation and Fatherland' (Flores de Lemus, 1928: 42).

5 Vicens Vives tends to present a somewhat positive image of the return to protectionism, portraying its reinforcement as inevitable. Regarding the 1891 tariff, he states that: 'The development of the iron and steel industry and the best moments of the textile industry came about under this protectionist regime ... the loss of the colonies forced Spain to defend itself, and it should not be considered odd that on March 3rd 1906, a clearly protectionist tariff was approved in Spain' (Vicens Vives, 1990: 645, translated from Spanish). Following this line, Josep Fontana also maintains a firm position regarding the inevitability of the protection: 'Perhaps the main problem was not the protection itself, but instead its reinforcement, when it would have been more positive to gradually reduce it' (Maluquer, 1987: 71, translated from Spanish). Later on he confirms the impossibility of reducing the tariff rate with the 1906 tariff: 'The trajectory followed by the Spanish economy in the years 1898–1921 and

the economic policy that implemented it responded to almost inevitable constraints. There was probably no alternative.' Nevertheless, he ended up reckoning that 'the costs of the nationalist option were probably excessively high' (ibid.: 99).

6 See Tortella (1994), Prados (1982, 1988), Carreras (1984), Fraile (1991), Tena (1992a, 1995).

7 See the studies of Costas (1988), Serrano Sanz (1989) and Sabaté (1996).

8 The project began with the Spanish case study (see Prados and Tena, 1994) and it will hopefully conclude with a summary of all the research in Tena (1999). The Italian case study began at a later stage, but has already given rise to some publications (see Federico and Tena, 1998).

9 The first version of this measurement can be seen in Prados and Tena (1994). For an alternative annual indicator, see Tirado (1994). A critique of the latter can be found in Tena and Tirado (1996).

10 See the studies of Costas (1988), Serrano Sanz (1987, 1989), Tirado (1994) and Sabaté (1996).

11 Demand is normally closely correlated with GDP, but not always.

12 The price index of English exports to Spain, constructed by Prados de la Escosura, rises from 100 in 1850 to 115 in 1864 (Prados, 1988, Table 5-A2: 257). See also *el Arancel* (1960: 21).

13 The *Base Quinta* is section number 5 of the regulation plan of the 1869 Figuerola Tariff law. It compelled increasing reductions of tariffs after 1875, enforcing that the maximum tariff on every item would not be more than 15 per cent (*ad valorem* level) in 1881. It was never implemented because of the *Restauración* of King Alfonso XII six months before the July 1875 deadline and it was repealed.

14 In principle, customs income from budgetary sources is consolidated but includes export rights, as well as other charges and taxes which are not strictly customs-based. This is reflected in a higher level.

15 Federico and Tena (1998).

16 In principle, the difference between both prices may be less than the total amount of the tariff (so-called watered protection). However, this case does not usually create empirical problems for estimating protection, since these types of goods are not imported due to their higher price in comparison with domestic production.

17 Anderson (1995) and Feenstra (1995) have argued in favour of estimating protection on the base of domestic prices inclusive of tariffs, i.e. $T^*i = Ai/(Pi + Ai)$. The difference is small when tariffs are not too high. Nevertheless, leaving aside the traditional definition would imply not being able to compare the results of the estimation with those of most other authors, both for the Spanish case and for other countries.

18 For the bias to be relevant, the fact that the product represents a significant share of total imports is a necessary but not sufficient condition. This is because, if elasticity is low enough, a significant tariff increase may not significantly affect the imported quantity.

19 A similar system, though applied to continuous time-series, has been recently used by Crucini (1994) and Irwin (1998). However, their approach is methodologically less ambitious, since it only considers the price and tariff effects, whilst our main interest is to capture the effect of import shifts.

20 For the years under consideration, the estimated aggregate bias is 8.5 per cent for 1877, 4.7 per cent for 1889, 0.8 per cent for 1897, −10.5 per cent for 1913 and −7.7 per cent for 1926. A relatively moderate bias has also been estimated for both primary and manufactured products: in 1877, 8.4 per cent for primary products and 17.7 per cent for manufactures; in 1889, 6.5 per

cent and 9.4 per cent respectively; in 1897, 5.6 per cent and −0.6 per cent; in 1913, −11.0 per cent and −4.5 per cent; and, in 1926, −7.7 per cent and −8.5 per cent. The origin of the biases in the valuations of the products may be attributed to the suspicion that protectionist groups raised the valuations of manufactured goods with the objective of obtaining an *ad valorem* nominal protection more moderate than the real protection. This overvaluation has only been detected for the years preceding 1896. Concerning manufactures, for the years of this study, only 1877 seems relevant, since the bias for 1889 is small, being negative in other years. The fact that the global bias for manufactures was negative does not however exclude the fact that, within the group of manufactured products, some especially influential pressure groups may have attained overvaluations that were greater than average. A study of the revaluation of manufactures, or especially of those where the risks of a bias are greater, can be justified on the following counts: 1) the difficulty in obtaining international prices homogenous to those of our statistics for a wide variety of manufactured products (reasons stated by all Spanish authors that have worked on this topic); 2) if the biases expected in the historiographic literature are the product of pressure groups, these can only be upward biases, and, in that case, the results of this study would offer an estimation of the nominal protection in accordance with the interest of these pressure groups, that is, more moderate than the real bias. Departing from the supposition that there are good reasons to believe that the biases in the valuations do not have a homogenous tendency and that it is necessary and possible to individually re-valuate each product, an alternative way can be chosen (see Tirado, 1994). A critique of this alternative attempt can be found in Tena and Tirado (1996).

21 The correspondence has been introduced into the database for a level of five digits, with the intention of obtaining a reliable correspondence for the aggregation of three digits. This task was carried out with the systematic use of the United Nations dictionary (1985), which, departing from the name and characteristics of a product, allows a match with a five-digit number from the SITC classification, second revision, for each product included in the *Volúmenes Anuales del Comercio Exterior* (Annual Volumes of [Spanish] Trade) for the five years chosen.

22 Temporary trade (*comercio temporal*) and returned merchandises (*mercaderías devueltas*) have been excluded when they are identifiable in the statistics, as occurs for the years 1889, 1897 and 1913. For the year 1926, series of 'general' and 'special' trade seem to already exclude these two concepts with greater rigour.

23 For 1877, products included in the statistics were not corresponded with the tariff classification number, as was subsequently done. In the year 1926, the statistics do not display tariff revenue for each product, so tariff revenues have been estimated from the second column of specific tariffs published in 1925, that is, those available on 1926 for their application (*Consejo de Economía Nacional*, 1925), which include all the tariffs lowered after the end of the negotiation of trade agreements (carried out between 1921 and 1924).

24 See League of Nations (1927), Tumlir and Till (1971).

25 Compare as well the low level obtained for these same indicators in the Italian case for that same year, 1877 (NT: 7.3 per cent; UNT: 6.3 per cent). Statistical Appendix, Federico and Tena (1998).

26 See Federico and Tena (1998, figure 1: 79), and Chapter 6 in this volume.

27 Although it is generally assumed that the relationship between the increase of the sectorial product and its level of protection have a linear relation, this need not always be the case (Anderson, 1994).

28 The disaggregated information of all the products included in the estimation, along with the denomination of their *ad valorem* protection and their importance (arranged in accordance to their SITC within the GATT classification), is available in paper format on request. For any other queries, please contact the author.

29 The nominal protection of wheat flour changed from 31.4 per cent to 41.7 per cent between 1897 and 1913, causing a reduction from 3.57 per cent to 0 per cent of total imports. Meats and canned foodstuffs increased their protection from 17.7 per cent to 33.1 per cent in those same years, thus reducing their percentage over total imports from 0.4 per cent to 0.08 per cent. Cane and brown sugar saw their nominal protection increase from 0.44 per cent to 110 per cent, whilst their weight over total imports shrank from 2.02 per cent to 0.01 per cent. Water, and wine and liquor, saw their percentages change, respectively, from 18.2 per cent to 32.9 per cent and from 0.37 per cent to 0.2 per cent. See Appendix 13.2 for the disaggregation of the results of Table 13.3 (given their extension, they are not presented here, but are available to any reader that requests them).

30 Simpson (1996) estimates that wheat represents, on average, approximately 20 per cent of agricultural production for some years of the period 1890–1932. The fourth chapter of the GHER (1980) book probably remains the best quantitative study available of the evolution of agricultural tariff and non-tariff protection until the First World War.

31 The arithmetic average of the tariffs on wheat for the period 1892–1905 was 6.7 Pesetas per hectolitre, and for the 1897 tariff it was 8.19. For the period 1906–13, the average was 7.39, and for the 1913 tariff it was 6.93 (averages calculated from GHER, 1980, Table 14: 96).

32 From the General Railway Law of 1855 until the tariff law of September 1896, most of the railway equipment enjoyed a special tariff system, with reduced duties in comparison with the other categories of iron and steel. In 1897, although most of the railway equipment was maintained within the category of 'special trade', the privileges of this group were reduced and they suffered a considerable tariff increase (for example, in 1896 the bars and the rails covered by 'special trade' had an *ad valorem* protection of 13.8 per cent, whilst in 1897 it had risen to 28.8 per cent; linking metallic parts rose from 12 per cent to 53 per cent). Due to the changes introduced by the 1896 law, the year 1897 cannot be considered a representative year regarding what occurred with railway equipment between 1892 and 1896. But, in contrast, the following ten years until 1906 can be considered as such. The changes in tariffs introduced in September 1896 in relation to the 1891 and previous tariffs can be seen in Aran Pérez (1988: 8). Discounts and franchises for railway equipment were included within 'general trade' in the year 1877. In 1889 and 1897, these privileges began to be registered under an entry called 'special trade', and non-privileged railway equipment became incorporated with the rest of the 'general trade'.

33 A study of the levels of protection and imports of electric machinery and materials between 1890 and 1935 can be seen in Tena (1988).

34 See Sabaté (1996) and Comin (1993).

35 Sabaté (1996) quantifies the contribution of the increase in revenue from colonial goods between 1895–9 and 1900–4 in 7 per cent of the total ordinary revenue of the state. In this case, the contribution to total revenue is 32 per cent, although the period considered here is different, between 1897 (two years before the Villaverde reform) and 1913 (a year in which the 10 pesetas per kilo surcharge applied by the law of 24 December 1912 on colonial products, excluding sugar, influenced the results heavily).

36 Traditionally, some scholars believe that it is necessary to exclude the so-called revenue-generating products from the estimates of nominal protection, since their introduction is mainly due to fiscal rather than protectionist reasons. That the legislator declares a fiscal intention when imposing a tariff does not mean that the tariff has no protectionist consequences. Some of the revenue-generating products were domestically produced or had close direct substitutes. In other cases (that is, when products were not domestically produced and had no close substitutes) the consequences of a tariff only affected consumer welfare (directly) and the allocation of resources (indirectly). The former, through decreasing their income, and the latter, by incentivating the production of direct substitutes (for example, a high tariff on coffee, cocoa or cinnamon can favour the production of chicory or varieties of Mediterranean origin) or of their inputs. Therefore, it is not possible to justify the exclusion of any group of products only due to fiscal reasons. In any case, this exclusion has to be individual and economically justified. As Serrano Sanz (1987: 115–16) explains, in the Spanish case not even the official literature gives a doctrinal explanation:

> Since there was no doctrinal definition of what was meant to be understood by revenue-generating products, the outline of the group fades progressively and the number of products included in it keeps on augmenting. On the one hand, some goods of which there is no domestic production but an increasing trade are aggregated, for example petroleum or some chemical products. On the other, some domestically produced goods also provide increasing revenue, such as wheat. The truth is that, when the following tariff reform comes under discussion in 1906, seventy entries are identified as revenue-generating, whilst they were 22 in 1869 (translated from Spanish).

37 Very recently, Nye (1991) has argued that the so-called revenue-generating tariffs on wine and liquor need to be included to estimate British protection in the years 1800–75, in order to capture the protective effects of substitutes on the general consumption of beer (see also his recent controversy on this matter with Douglas Irving (March 1993)).

38 In the Spanish case, there are very clear examples of colonial foodstuffs that have direct substitutes, as is the case of beet and cane sugar. Where price increases due to revenue-generating tariffs on colonial foodstuffs such as cinnamon, pepper and clove may have had protective effects on nationally produced spices such as saffron, cumin, oregano or ground pepper. Something similar could be said of coffee, cocoa or tea, which, as with wine and beer in the English case, may have had substitutes for general consumption (chicory, for example). Any choice could seem arbitrary, and in this case we have introduced many possible options including the more economically intuitive option of excluding a significant group of products without domestic production or close substitutes. See the text for details.

39 Antonio Cánovas del Castillo (1828–97) the principal architect of the restoration of the Bourbon dynasty and author of the 1876 constitution, was several times prime minister between 1874 and his assassination in 1897.

40 See Tena (2001).

41 See Sabaté (1996), Nadal-Sudria (1993), Comín (1993), Pan Montojo (1994) and Tirado (1996a).

42 Many other European tariff laws in this period were designed in the clamour of a commercial war with France and, in spite of starting from negotiating budgets similar to the Spanish one, it is possible to observe both a different nature and a different profile. A wide range of (international) literature on

this subject highlights that liberalisation and protectionist processes in the nineteenth and twentieth centuries were accompanied by complex bilateral and multilateral negotiations. In every case, the objective of negotiations between governments is to reduce the damage caused by the increase of barriers to the national products exported to foreign markets.

43 Period in Spanish history running from 1868 to 1874.

44 According to Vicens Vives, 1987:

> The 1886 crisis gave the opportunity to the Catalan protectionists to rally with the Basque metallurgic workers and the Castilian cereal-growers. That is how the battle for the tariffs in 1891 was won, and the bases for the protectionist articulation of the Spanish economy were established. The loss of the colonies in 1898 made matters worse and prepared for the adoption of the 1906 tariffs.

Raymond Carr (1990) is even more explicit: 'Protectionists that had failed with the French treaty of 1882 succeeded in 1892 when the treaty with Germany was rejected by the Senate. With the National League of Producers, Catalonia had finally managed to create, after insisting for forty years, a "national" organisation in favour of protection that included the interests of the Basque steel and the Castilian wheat' (translated from the Spanish edition). The apparent contradiction of a mainly agricultural country where industry played the leading role in the demand for protection is resolved in 'olsonian' terms in Fraile (1991).